

REMARKS

This amendment/response is being filed in response to the Office Action having a mailing date of October 13, 2006. With this response, claims 1 and 3-7 are pending in the application.

I. New matter objections

The present Office Action objected to the amendment previously filed on August 14, 2006 for allegedly introducing new matter. Specifically, the present Office Action stated that "The specification as explicitly disclosed in all of the figures discloses that the optical path for the signal beam and the servo beam are essentially the same, and to the most they are just being focused at different locations but that they have different optical paths." The Office Action's assertion that the previous amendment introduced new matter is respectfully traversed herein.

Specifically, page 7, lines 20-21 of the present application describes the following (emphasis ours):

As shown in Figure 1, in the present invention, a servo beam 10 and a signal beam 12 are converged by a common objective lens (Fourier transform lens) 14 but since the incidence angles of the servo beam 10 and the signal beam 12 to the objective lens 14 are different from each other, the servo beam 10 and the signal beam 12 passing through the objective lens 14 follow different optical paths.

Furthermore, each of the Figures 1, 2, 4, 5, and 6 of the present application clearly show that the servo beam 10 advances along an optical path different from that along which the signal beam 12 advances after they have passed through the lens 14/207/611. Indeed, since the signal beam 12 and the servo beam 10 are "being focused at different locations" on the recording medium, these beams must necessarily advance along different optical paths.

In view of the above, it is respectfully submitted that no new matter has been introduced, since the recitations in claims 1, 3, 6, and 7 are supported by the specification.

Accordingly, it is kindly requested that the request to cancel the previously added recitations to claims 1, 3, 6, and 7 be withdrawn.

II. Rejections under 35 USC § 112, first paragraph

The present Office Action rejected claims 1 and 3-7 under 35 USC § 112, first paragraph, for allegedly failing to comply with the enablement requirement. Specifically, the Office Action stated that the rejection is based on the new matter issues (previously addressed above), and further stated that “the specification and claims fail to teach why the diffraction (235) in Figure 2 is capable of making the servo beam and the signal beam that [are] incident on the diffraction grating in the SAME optical path and in the SAME incidence angle to be deflated[sic] differently. This generally would not happen for an ordinary diffraction grating.” This rejection under 35 USC § 112, first paragraph is respectfully traversed herein.

As is known by a person skilled in the art, when light is incident on a diffraction grating, diffractive and mutual interference effects occur, and light is reflected or transmitted in discrete directions. Stated another way, it is well known to a person skilled in the art that even if two beams impinge on a diffraction grating in the same optical path and in the same incidence angle, if they have different wavelengths, they are deflected in different directions by the diffraction grating.

Accordingly, it is respectfully submitted that claims 1 and 3-7 meet enablement requirements, and it is therefore requested that the rejections under 35 USC § 112, first paragraph be withdrawn.

III. Double patenting

The present Office Action repeated the provisional rejection of claims 1 and 3-6 under the judicially created doctrine of obviousness-type double patenting, with respect of copending application U.S. Application Serial No. 10/800,607. A Terminal Disclaimer along with the requisite fee is enclosed herewith, thereby overcoming and/or rendering moot the provisional obviousness-type double patenting rejection. Accordingly, it is kindly requested that the provisional obviousness-type double patenting rejection be withdrawn.

IV. Discussion of Claim Rejections Under 35 USC § 103

The present Office Action rejected claims 1, 3-4, and 6-7 under 35 U.S.C. § 103(a) as being unpatentable over Horimai (U.S. Patent Application Publication No. 2003/0063342) in view of Amble (U.S. Patent No. 6,738,822). Claim 5 was rejected under 35 U.S.C. § 103 as being unpatentable over Horimai in view of Amble in view of Matsui (U.S. Patent No. 5,784,353). Claims 1, 3-4, and 6-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Amble. For the reasons set forth below, these rejections are respectfully traversed herein.

A. Discussion of dependent claim 5

Dependent claim 5 recites “wherein the beam deflecting means comprises a diffraction grating disposed on an incidence side of the servo beam with respect to the objective lens.” In rejecting claim 5, the present Office Action admitted that Horimai does not teach the recited “diffraction grating,” since Horimai is described as teaching that the “actuator (13) could be used to move the objective lens (120) for regulating the beam optical paths.” To supply the missing teachings of Horimai, the Office Action cited Matsui as disclosing diffraction gratings that can be used as “beam deflection means in the servo projection optics of Horimai.”

This rejection is traversed herein. It is respectfully submitted that Matsui does not cure the deficiencies of Horimai.

Specifically, the signal beam, the reference beam, and the servo beam of Horimai are emitted from the same light source 25 and have the same wavelength. Therefore, if a diffraction grating is placed in the optics of Horimai, the optical paths of the signal, reference, and servo beam must be the same as each other. Stated another way, if the servo beam and the signal beam of Horimai impinge on a common diffraction grating in the same optical path and the same incidence angle, then the optical paths of his servo beam and signal beam after they have passed through the diffraction grating must necessarily be the same, since the wavelengths of his servo and signal beams are the same. This is a fundamental concept/result due to the physical properties of a diffraction grating.

Accordingly, if the diffraction grating of Matsui is placed in the optics of Horimai, the limitations of claim 5, which require different optical paths for the signal and servo beams (from base claim 3) and further require projection of the servo and signal beams onto different regions “after passing through an objective lens,” cannot and can never be met by the combination of these references. Accordingly, it is respectfully submitted that there is no teaching or suggestion in these references to make the combination, and/or that there is in fact a teaching against making the combination (e.g., the diffraction grating of Matsui requires different wavelengths, whereas Horimai teaches the same wavelength), and/or the claim limitations would not be met if the references are combined as the Office Action has done.

It is therefore noted here for the record that the Office Action appears to be trying to use the claimed invention as a blueprint to combine various features of the prior art to arrive at the claimed subject matter. It is well settled that such use of hindsight is impermissible as a matter of law. *In re Gorman*, 18 U.S.P.Q.2d 1885, 1888 (Fed. Cir. 1991). It is the prior art references themselves that must suggest the combination. *Kimberly Clark v. J & J*, 223 U.S.P.Q. 603 (Fed. Cir. 1984). *See also Fromson v. Advanced Offset Plate*, 755 F.2d 1549, 1556 (Fed. Cir. 1985). The cited references, as explained above, clearly do not teach or suggest using a diffraction grating in the optical system of Horimai where signals of the same wavelength are used, since using a diffraction grating will produce the same optical paths if the signals have the same wavelengths.

Moreover, it is further noted that Horimai has been cited as using the actuator (13) to move the objective lens (120) for regulating the beam optical paths, wherein the servo and signal beams have the same wavelength. Matsui has been cited as disclosing a diffraction grating. These are clearly inconsistent/incompatible techniques that teach away from combining the two references. The Examiner *must* take the references in their entirety, and cannot simply ignore portions that *teach away* from the claimed subject matter or otherwise argue against obviousness. *Bausch & Lomb v. Barnes-Hind/Hydrocurve, Inc.*, 230 U.S.P.Q. 416, 420 (Fed. Cir. 1986). It is impermissible to pick and choose from a reference only so much of it as will support a conclusion of obviousness to the exclusion of other parts necessary to a full appreciation of what the reference fairly suggests to one skilled in the art. *Id* at 419. The courts

have long cautioned that consideration *must* be given “where the references diverge and *teach away* from the claimed invention.” *Akzo N.V. v. International Trade Commission*, 1 U.S.P.Q.2d 1241, 1246 (Fed. Cir. 1986). In other words, the Examiner has not explained why one skilled in the art would ignore the clear and unambiguous teachings of Horimai that clearly indicate that his servo and signal beams have the same wavelength and are used in conjunction with the actuator (13), while the Examiner has instead chosen to isolate the teaching of Matsui of a diffraction grating that operates in conjunction with beams of different wavelengths, and has then combined this out-of-context teaching of Matsui into the optics of Horimai.

In view of the above, it is respectfully submitted that claim 5 is allowable. Accordingly, it is kindly requested that the rejection of claim 5 be withdrawn.

B. Discussion of the independent claims

Independent claim 1 recites, *inter alia*, “a signal beam and a reference beam emitted from a first light source and having a wavelength λ_0 ” and “a servo beam emitted from a second light source and having a wavelength λ_1 different from that of the signal beam.” Claim 1 further recites “the servo beam being emitted from the second light source at a same time as the signal beam and the reference beam are emitted from the first light source.” It is respectfully submitted that none of the references, whether singly or in combination, meet these limitations.

For example, it has been previously explained above that Horimai does not provide a signal beam and a servo beam having different wavelengths from two light sources. The Office Action has admitted on page 5 that Horimai does not teach these features.

Furthermore, it is noted that paragraph [0135] of Horimai states that since the output of the emission of light from the light source 25 is set at low output for reproduction and the controller predicts the timing at which light that has exited the objective lens 12 passes through the address servo areas 6 and causes the light source 25 to emit the servo light, it is apparent that the servo beam of Horimai is not emitted at the same time as his signal beam, as recited in claim 1. Thus, claim 1 is clearly allowable over Horimai, since Horimai does not disclose, teach, or suggest signal and servo beams having different wavelengths and emitted at the same time from respective first and second light sources.

To supply the missing teachings of Horimai, the present Office Action has cited Amble. However, it is respectfully submitted that Amble does not cure the deficiencies of Horimai.

Pages 5-6 of the present Office Action has cited Figures 3C and 3E of Amble as allegedly disclosing a “signal beam” and a “servo beam” having different optical paths. This interpretation of Amble by the Office Action is respectfully traversed herein—this interpretation of Amble is clearly incorrect.

More specifically, Amble discloses that a format hologram (format grating) 106 having a periodic, spatially modulated refractive index and defining a plurality of reflective Bragg fringes is formed in the read/write layer 90 by interfering the format hologram recording beams 100A and 100B. *See, e.g.*, column 8, line 37 through column 9, line 19 and Figure 3F of Amble.

Further, Amble discloses that data are to be recorded by locally altering the format hologram 106 at a storage location 108 using a focused write beam 102. *See, e.g.*, column 8, lines 20-33 and Figure 3G of Amble). Moreover, Amble states in column 8, lines 24-37 that following formation of the format hologram 106 in the read/write layer 90, data are subsequently recorded in the read/write layer 90 via the write beam 102, which causes further polymerization in the photopolymer at selected data storage locations 108 to alter or delete the format hologram at the data storage locations 108.

Thus, it is the “format hologram 106” of Amble that corresponds to the “data” recited in claim 1 and the “data” of Amble does not correspond to the “data” recited in claim 1, since the “format hologram 106” of Amble is formed in the read/write layer 90 by interfering the “format hologram recording beams” 100A and 100B and the “data” of Amble are formed in the read/write layer 90 using the single write beam 102, while “data” are recorded by projecting a signal beam and a reference beam in claim 1. In other words, Amble’s “data” is not recorded in the read/write layer 90 using the hologram, but rather is recorded using his write/beam 102.

Therefore, it is apparent that the write beam 102 of Amble does not correspond to the “signal beam” of claim 1 and that one of the format hologram recording beams 100A or 100B better corresponds to the signal beam of claim 1.

Amble then further states on column 8, lines 35-37 that “Servo beam 104 will track servo layer 94 during writing and readout of medium 86” (emphasis ours). Accordingly, the servo beam 24 or 104 of Amble is projected onto the recording medium during the “data” recording operation that uses the read/write beam 102, and the servo beam 24/104 is therefore not projected onto the recording medium at the same time as the “format hologram recording beams” 100A and 100B are projected onto the recording medium. The servo beam of Amble (which is projected along with the read/write beam 102) thus appears to be projected after the formal hologram recording beams 100A and 100B have been projected to interfere with each other to form the format hologram 106.

Thus, it is abundantly clear that Amble does not meet the limitations of claim 1 that are missing from Horimai that require the servo beam to be emitted at the same time as the signal beam. Again, the Examiner is kindly reminded that the references must be considered in their entirety and that the use of hindsight is impermissible. As such, there is no motivation or suggestion to combine Amble with Horimai and/or the resulting combination would still not meet the limitations of claim 1. Claim 1 is therefore allowable.

Independent claim 3 contains limitations directed towards different wavelengths and optical paths of the signal and servo beams, and simultaneous emission of the signal and servo beams. Independent claim 6 contains limitations also directed towards different wavelengths and optical paths of the signal and servo beams, and emission of the signal and servo beams at the same time. For reasons similar to those described above with respect to claim 1, claims 3 and 6 are also allowable.

V. Information Disclosure Statement (IDS)

A supplemental IDS, form PTO-1449 having references listed thereon, copies of the non-U.S. patent reference(s) listed thereon, and the appropriate fee are being submitted with this amendment. The Examiner is kindly requested to enter and consider these references, and to include an initialed copy of the form PTO-1449 along with the next communication, so as to confirm that the references listed therein have been considered.

VI. Conclusion

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claims. Thus, given the above amendments and accompanying remarks, the independent claims are now in condition for allowance. The dependent claims that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
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Enclosures:

Terminal Disclaimer
Supplemental IDS

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